AMENDMENTS TO THE CLAIMS

Below is the entire set of pending claims pursuant to 37 C.F.R §1.121(c)(3)(i), with any mark-ups showing the changes made by the present Amendment.

1. (Currently amended) A logic computing system comprising:

a plurality of data storage units (41a to 41d, 49a to 49d) which store a plurality of configuration data modules to be retrieved from outside the logic computing system, wherein each of the configuration data modules includes a look up table; ~~and~~

a logic computing unit (43) which includes a plurality of programmable logic circuits (43a),

wherein said logic computing unit provides a logical function value of logic input data as logic output data, by referring to at least one configuration data module retrieved and stored in at least one of said plurality of data storage units (41a to 41d, 49a to 49d) while another of said plurality of configuration data modules is being retrieved from outside the logic computing system ~~unit~~ and stored in another one of said data storage units (41a to 41d, 49a to 49d); and

wherein said plurality of data storage units (41a to 41d, 49a to 49d) are located outside said logic computing unit (43).

2. (Original) The logic computing system according to claim 1, wherein:

said plurality of data storage units (41a to 41d) form a shift register (40); and

said logic computing unit (43) refers to the configuration data module(s) stored in one or more of said plurality of data storage units (41a to 41d) included in said shift register (40).

3. (Original) The logic computing system according to claim 2, wherein said shift register shifts (40) the configuration data modules among said plurality of data storage units (41a to 41d) circularly.

4. (Original) The logic computing system according to claim 1, comprising a selector (42) which selects at least one of said plurality of data storage units (49a to 49d), wherein said logic computing unit (43) refers to the configuration data module which is stored in said data storage unit selected by said selector (42).

5. (Original) The logic computing system according to claim 4, wherein said selector selects one of said plurality of data storage units (49a to 49d) from among said plurality of data storage units circularly.

6. (Original) The logic computing system according to claim 1, comprising:

a parameter register (45) which stores all or part of internal parameters of said logic computing unit (43) for stacking;

a detector (44) which detects a call and a call back by one of the plurality of configuration data modules to another one of the plurality of configuration data modules; and

a controller (47) which controls logic computing by said logic computing unit, wherein said controller (47):

stores the internal parameters of said logic computing unit in said parameter register (45), when said detector (44) detects a call by one of the plurality of configuration data modules to another one of the plurality of configuration data modules as a subroutine; and

restores the internal parameters stored in said parameter register (45) in said

logic computing unit (43), when said detector (44) detects a call back to one of the plurality of configuration data modules.

7. (Original) The logic computing system according to claim 1, further comprising a loader (3) which loads the configuration data module(s) to one or more of said plurality of data storage units (41a to 41d, 49a to 49d), wherein each of said plurality of data storage units (41a to 41d, 49a to 49d) stores the configuration data module rewritably.

8. (Original) The logic computing system according to claim 7, comprising:

a detector (44) which detects a call by one of the plurality of configuration data modules to another one of the plurality of configuration data modules; and

a controller (47) which controls logic computing by said logic computing unit (43), wherein said controller (47):

searches, when said detector (44) detects a call by one of the plurality of configuration data modules to another one of the plurality of configuration data modules as a subroutine, said plurality of data storage units (41a to 41d, 49a to 49d) for the configuration data module as the subroutine; and

sends a load command to said loader (3), in a case where the configuration data module as the subroutine is not searched out, and said loader (3) loads the configuration data module as the subroutine which is indicated by the load command to one of said plurality of data storage units (41a to 41d, 49a to 49d).

9. (Original) The logic computing system according to claim 1, comprising:

a parameter buffer (46) which stores all or part of internal parameters of said logic computing unit (43) for handing;

a detector (44) which detects a call or a call back by one of the plurality of configuration data modules to another one of the plurality of configuration data modules; and

a controller (47) which controls logic computing by said logic computing unit, wherein said controller (47):

stores the internal parameters of said logic computing unit (43) in said parameter buffer (46), when said detector (44) detects a call or a call back by one of the plurality of configuration data modules to another one of the plurality of configuration data modules; and

inputs the parameters stored in said parameter buffer (46) to said logic computing unit (43), when the configuration data module which is called or called back is arranged so that it can be referred to by said logic computing unit (43).

10. (Original) The logic computing system according to claim 1, comprising a compiler (6) which creates each of the plurality of configuration data modules based on each of a plurality of source program modules.

11. (Currently amended) A logic computing method comprising:

retrieving at least one of a plurality of configuration data modules, each of which includes a look up table, from outside a logic computing system;

storing the retrieved at least one of the ~~a~~ plurality of configuration data modules in a corresponding at least one of a plurality of data storage units (41a to 41d, 49a to 49d) inside the logic computing system;

preparing a logic computing unit (43) inside the logic computing system and outside the plurality of data storage units (41a to 41d, 49a to 49d), wherein the logic computing unit includes a plurality of programmable logic circuits (43a);

referring by said logic computing unit (43) to the at least one configuration data module stored in the at least one of the plurality of data storage units (41a to 41d, 49a to 49d); and

providing a logical function value of logic input data as logic output data, based on the configuration data module referred to by said logic computing unit (43), while retrieving another of said plurality of configuration data modules from outside the logic computing system ~~unit~~ and storing it in another one of said data storage units (41a to 41d, 49a to 49d).

12. (Original) The logic computing method according to claim 11, comprising:

forming a shift register (40) using said plurality of data storage units (41a to 41d); and

referring to the configuration data module(s) stored in at least one or more of said plurality of data storage units (41a to 41d) included in said shift register (40).

13. (Original) The logic computing method according to claim 12, comprising shifting by said shift register (40) the configuration data modules among said plurality of data storage units (41a to 41d) circularly.

14. (Original) The logic computing method according to claim 11, comprising:

selecting by a selector (42) at least one of said plurality of data storage units (49a to 49d); and

referring to the configuration data module stored in said data storage unit selected by said selector (42).

15. (Original) The logic computing method according to claim 14, wherein selection made by said selector (42) is changed among said plurality of data storage units (49a to 49d)

circularly.

16. (Original) The logic computing method according to claim 11, comprising:

detecting a call by one of the plurality of configuration data modules to another one of the plurality of configuration data modules as a subroutine;

storing all or part of internal parameters of said logic computing unit (43) in a parameter register (45) in response to said detecting; and

restoring the internal parameters stored in said parameter register (45) in said logic computing unit (43), when one of the plurality of configuration data modules is called back.

17. (Original) The logic computing method according to claim 11, comprising:

storing the plurality of configuration data modules in said plurality of data storage units (41a to 41d, 49a to 49d) rewritably; and

loading by a loader (3) at least one of the plurality of configuration data modules to be stored in said plurality of data storage units (41a to 41d, 49a to 49d).

18. (Original) The logic computing method according to claim 17, comprising:

searching, when a call by one of the plurality of configuration data modules to another one of the plurality of configuration data modules as a subroutine is detected, said plurality of data storage units (41a to 41d, 49a to 49d) for the configuration data module as the subroutine;

sending a load command to said loader (3), in a case where the configuration data module as the subroutine is not searched out; and

loading by said loader (3) the configuration data module as the subroutine which is indicated by the load command to one of said plurality of data storage units (41a to 41d, 49a

to 49d).

19. (Original) The logic computing method according to claim 11, comprising:

detecting a call or a call back by one of the plurality of configuration data modules to another one of the plurality of configuration data modules;

storing all or part of internal parameters of said logic computing unit (43) in a parameter buffer (46) in response to said detecting; and

inputting the parameters stored in said parameter buffer (46) to said logic computing unit (43), when the configuration data module which is called or called back is arranged so that it can be referred to by said logic computing unit (43).

20. (Original) The logic computing method according to claim 11, comprising creating by a compiler (6) each of the plurality of configuration data modules based on each of a plurality of source program modules.

21. (Previously presented) The logic computing system according to claim 1, further comprising a loader (3) which loads the configuration data module(s) from outside the logic computing unit to one or more of said plurality of data storage units (41a to 41d, 49a to 49d),

wherein:

said logic computing unit (43) generates a load command in the process of computing by said plurality of programmable logic circuits (43a); and

said loader (3) loads the configuration data module which is indicated by the load command in the process.

22. (Currently amended) The logic computing method according to claim 11, further

comprising:

generating a load command in the process of computing by said plurality of programmable logic circuits (43a); and

loading by a loader (3) the configuration data module which is indicated by the load command in the process from ~~form~~ outside the logic computing unit to one of said plurality of data storage units (41a to 41d, 49a to 49d).